

CLAIMS

We Claim:

1. A method performed by a hub for enabling a first device to allow communications from a second device wherein the first device is separated from the second device by access blocking apparatus, said method comprising:

terminating a virtual pipe from the first device,
 assigning an IP address to the first device and associating this IP address with the virtual pipe,
 receiving communications originated by the second device and addressed to said IP address,
 routing the communications addressed to said IP address to the virtual pipe, and
 tunneling the communications over the virtual pipe to the first device.

2. The method of claim 1 further comprising the steps of:
 receiving second communications originated by the first device through the virtual pipe, and
 routing the second communications from the first device to the second device.

3. The method of claim 1 further comprising the step of:
 encrypting the communications prior to tunneling the communications over the virtual pipe.

4. The method of claim 1 further comprising the steps of:
 receiving a plurality of communications originated by a plurality of second devices and addressed to the IP address,
 routing the plurality of communications addressed to the IP address to the virtual pipe, and
 tunneling the plurality of communications over the virtual pipe to the first device.

5. The method of claim 1 further comprising the steps of:
 establishing an access control list to control access to the first device, and
 based on the access control list, routing the communications from the second device to the first device only if the second device has permission to access the first device.

6. The method of claim 1 further comprising the steps of:
 terminating a second virtual pipe from the second device,

assigning a second IP address to the second device, and
receiving the communications from the second device through the second virtual
pipe.

5 7. The method of claim 6 wherein the IP addresses assigned to the first and second
devices are private IP addresses.

10 8. A system for enabling communications between a first device and a second device
wherein said first device is separated from said second device by access blocking apparatus,
said system comprising:

a secure hub, and

a virtual pipe between the first device and said secure hub,

15 said secure hub including a pool of available IP addresses from which an IP address
can be assigned to the first device, means for associating the assigned IP address with the
virtual pipe, means for routing communications from the second device and addressed to the
first device to the virtual pipe, and means for tunneling said communications over the virtual
pipe to the first device.

20 9. The system of claim 8 wherein said means for tunneling tunnels second
communications over the virtual pipe from the first device, and wherein said means for
routing routes the second communications to the second device.

10. The system of claim 8 further comprising:

25 a virtual pipe between the second device and said secure hub, and wherein said means
for associating associates a second IP address from the pool of available IP addresses with the
second virtual pipe, and wherein said means for tunneling tunnels said communications from
the second device through the second virtual pipe.

11. The system of claim 8 further comprising:

30 an access control list to control access to the first device, and wherein, based on the
access control list, said means for routing the communications from the second device to the
first device routes the communications only if the second device has permission to access the
first device.

35 12. A system for enabling communication to a first communication device through
the public network from a second communication device, said first and second

communication devices being separated by at least one security access blocking apparatus, said system comprising

a secure hub having routing and switching functionality and pipe termination functionality and having interfaces to said public network, and

5 means for creating a virtual pipe between said secure hub and said first communication device for tunneling communication,

said secure hub further including means for assigning an IP address to said first communication device and associating said IP address with said virtual pipe.

10 13. The system of claim 12 further including means for establishing said communication from said second communication device through said public network to said secure hub.

14. The system of claim 13 wherein said means for establishing said communication from said second communication device includes means for defining a second virtual pipe.

15. The system of claim 12 wherein said secure hub includes means for defining an access control list, said routing and switching functionality routing said communication from said second communication device to said virtual pipe only if such access is permitted by said
20 access control list.